

VESSEL MANAGEMENT PLAN



JORGENSEN FORGE EARLY ACTION AREA

Jorgensen Forge Corporation Property
Seattle, WA

Prepared for:



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Jorgensen Forge Early Action Area
Removal Action Work Plan

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1.0 Purpose & Objective

The purpose and objective of the Vessel Management Plan is to describe the proposed vessels, navigation routes, coordination of activities with waterway users, and the methods for controlling vessel traffic during the construction of the Jorgensen Forge Early Action Area Cleanup. .

2.0 Proposed Water Equipment

2.1 Dredge Barge

The dredge barge is the “Web” a spud barge owned by Pacific Pile & Marine. The Web Barge is 142-foot long by 50-foot wide with a 12-foot deep scow. It is outfitted with two heavy-duty spuds for anchoring and stability once it is in the desired location. The spuds on the Web are 90 feet long allowing it to anchor itself in 60+ feet of water. The barge will be equipped with heading sensor in order to track its position in the GPS system.

2.2 Contaminated Sediment Barge

Contaminated sediment barges used for the dredge spoils will consist of two identical barges each 180-foot long by 50-foot wide by 12-foot deep. The barges are equipped with concrete wear decks and 4-foot high steel fences around the perimeter that will be sealed to capture all dredge water for collection and treatment avoiding an overflow situation. The sediment barges have a capacity of 2,000 US short tons. At present the current barges planned for use are named the “KP-1” and “KP-2”.

2.3 Water Treatment Barge

A modular flexi-float barge will be used to hold the water treatment system. The flexi-float barge will carry the Hitachi 450 excavator. The flexi-float barge consists of two 60-foot long by 20-foot wide flexi floats connected together with a 4-foot deep scow. It is outfitted with two heavy-duty spuds for anchoring and stability once it is in the desired location. The spuds on the flexi-float barge are 50’ long allowing it to anchor itself in 30+ feet of water.

2.4 Backfill Material Barge

The material barge used for the backfilling will be 180-foot long by 50-foot wide by 12-foot deep. The barge is equipped with a concrete wear deck and 4-foot high steel fence around the perimeter. At present the current barge planned for use is named the “KP-3”.

2.5 Tug Boats

Boyer Towing will provide a 20’ x 50’ tugboat called the Sonja H, which is equipped with a DGPS system and Hypack Navigation Software. Two miniature-tugs, the WannaBee and Killer Bee, will also be used to assisting in shifting and transporting the various barges. The use of the small tugs offers a costs advantage as well as the ability to operator in shallow-water areas. Boyer Towing has several other similar tugboats that are well equipped for this project and located approximately 3,000’ away from the project.

2.6 Support Boats

Two to three small metal work skiffs will be used for the project. The skiffs will be used to transport personnel and supplies as well as maintain turbidity curtains. The skiffs will vary from 16'-21' with outboard motors ranging from 50-100 horsepower.

3.0 Navigation Routes

Pacific Pile & Marine will load backfill materials at CalPortland's Seattle Rock Yard on the Lower Duwamish Waterway. Here, the backfill material will be dumped into a stockpile and loaded onto PPM's barge via wheel loader. Once the barge has been loaded, it will be transported to the Jorgensen project site. Estimated distance one way is approximately 3.0 miles (see Figure 1).

Dredge spoils will be transported to PPM's main yard down river from the project site on the Lower Duwamish Waterway. Estimated distance one-way is approximately 1.0 mile (see Figure 1).

Loads for backfill materials will be a maximum of approximately 1800 tons per barge when fully loaded. An estimated 27(ea) loaded barges with backfill material will be delivered to the Jorgensen project site. According to PPM's planned schedule, an estimated 20 (ea) barge loads of dredge spoils are anticipated, however the total number of dredge and excavation spoils barge loads will vary with the amount of over depth taken. All barge haul routes mentioned above will be transported by the tug Sonja H. (or similar size tug).

PPM's push boat will either be used to move vessels on the project site or will be tied up to the bow of the derrick barge and used as a rudder while positioning for dredging and backfill placement.

4.0 Waterway Coordination

The Lower Duwamish Waterway is a busy industrial traffic route with a variety of users. Continuous coordination is required to ensure safe use of the waterway for PPM and its subcontractors as well as other users. In order to minimize the potential for waterway conflict, PPM maintains compliance with Coast Guard regulations, waterway rules, adheres to right-of-way hierarchy, and coordinates with other waterway tenants. Tribal fishing activities that could affect navigation will be coordinated between the Owner and the tribe and communicated to PPM, as necessary. Any other waterway navigational conflicts will follow the protocols outlined below.

4.1 Compliance with Regulations and Rules

Activities within the Lower Duwamish Waterway are regulated by the United States Coast Guard. Regulations related to navigation travel are found in the International Regulations for Preventing Collisions at Sea 1972 (COLREGS) and govern all rules for navigation, vessel lighting, and communications protocols. Travel up and down the

Lower Duwamish Waterway should occur in the main navigation channel at all times. Traveling outside the channel, especially at low tides could result and equipment damage, grounding, and project delays. All marine equipment must maintain the required safety supplies on board at all times, and radio communications should be in compliance with standard navigation protocols. Additional regulations address a variety of marine conditions from vessel worthiness to navigation to spill prevention to dredging limitations.

4.2 Right-of-Way Hierarchy

Right of way hierarchy is defined formally in the International COL REGS. Within the local Lower Duwamish Waterway Island Tug & Barge, Boyer Logistics, and Foss perform nearly all of the major equipment and barge movement. Typically, practical right-of-way is determined by communications between the two vessels, with generally the larger vessel having the right of way. Two channels, 16 and 19 are used on the Lower Duwamish Waterway to communicate vessel to vessel.

4.3 Coordinating with Bridge Construction and Other Tenants

All activities that will affect access to portions of the Lower Duwamish Waterway will be identified through the Coast Guard Local Notice to Mariners (LTAMs). The notices are posted weekly at <http://www.navcen.uscg.gov/?pageName=lnmDistrict®ion=13>. LTAMs must be checked weekly during dredging and backfill activities to ensure that PPM is informed and can inform the client as to any potential impacts to navigation channel access. PPM will also submit a LTAMs request to the Coast Guard prior to starting dredging activities.

5.0 Methods for Monitoring & Controlling Traffic

Communication protocol on under the International COL REGS and is regulated on the Lower Duwamish Waterway through the use of two main channels: 16 and 19.. While the tugs are transporting barges between LaFarge or CalPortland and Jorgensen Forge, they will monitor both channels to prevent a waterway conflict. In addition, in the event of a waterway emergency Channel 16 is monitored by the Coast Guard to allow for rapid response.

At all points during dredging and backfill, every attempt will be made to limit equipment staging in the navigation channel. However, the waterway is narrow in the Jorgensen project site section of the river and there will likely be regular movement of equipment that will enter the navigation channel. PPM will conduct operations in such a manner as to prevent obstruction to navigation. In the event that construction equipment (dredges, barges, work boats, anchor buoys, etc.) obstructs any channel or berthing areas as to make difficult or endanger the safe passage of vessels, said equipment shall immediately be moved on the approach of any vessel, to such an extent as may be necessary to afford a practical passage.

6.0 Moorage & Anchorage

PPM will moor all equipment against the dredge barge. The dredge barge will be held in place by spuds. In tidal situations, when material barges and other pieces of equipment cannot tie up to the derrick because of low water, they will be fleeted back to PPM's dock and tied up there.

Figure 1- Barge Haul Routes



Attachment A- Certified Barge Displacement Charts

BOYER TOWING, INC.

KP-1 #243

DECK BARGE

LOAD TABLE

Average Draft	Cargo Weight	Average Draft	Cargo Weight	Average Draft	Cargo Weight
2'-3"	7.8	5'-3"	737.3	8'-3"	1,530.3
2'-4"	27.2	5'-4"	758.5	8'-4"	1,553.2
2'-5"	46.7	5'-5"	779.7	8'-5"	1,576.2
2'-6"	66.2	5'-6"	801.0	8'-6"	1,599.2
2'-7"	85.7	5'-7"	822.3	8'-7"	1,622.3
2'-8"	105.3	5'-8"	843.6	8'-8"	1,645.5
2'-9"	125.0	5'-9"	865.1	8'-9"	1,668.6
2'-10"	144.7	5'-10"	886.5	8'-10"	1,691.9
2'-11"	164.4	5'-11"	908.0	8'-11"	1,715.1
3'-0"	184.2	6'-0"	929.6	9'-0"	1,738.5
3'-1"	204.1	6'-1"	951.2	9'-1"	1,761.8
3'-2"	224.0	6'-2"	972.9	9'-2"	1,785.3
3'-3"	243.9	6'-3"	994.6	9'-3"	1,808.7
3'-4"	263.9	6'-4"	1,016.3	9'-4"	1,832.2
3'-5"	283.9	6'-5"	1,038.1	9'-5"	1,855.8
3'-6"	304.0	6'-6"	1,060.0	9'-6"	1,879.4
3'-7"	324.2	6'-7"	1,081.9	9'-7"	1,903.1
3'-8"	344.4	6'-8"	1,103.9	9'-8"	1,926.8
3'-9"	364.6	6'-9"	1,125.9	9'-9"	1,950.6
3'-10"	384.9	6'-10"	1,147.9	9'-10"	1,974.4
3'-11"	405.2	6'-11"	1,170.0	9'-11"	1,998.3
4'-0"	425.6	7'-0"	1,192.2	10'-0"	2,022.2
4'-1"	446.1	7'-1"	1,214.4	10'-1"	2,046.1
4'-2"	466.5	7'-2"	1,236.6	10'-2"	2,070.1
4'-3"	487.1	7'-3"	1,258.9	10'-3"	2,094.1
4'-4"	507.7	7'-4"	1,281.3	10'-4"	2,118.1
4'-5"	528.3	7'-5"	1,303.7	10'-5"	2,142.1
4'-6"	549.0	7'-6"	1,326.1	10'-6"	2,166.1
4'-7"	569.7	7'-7"	1,348.6	10'-7"	2,190.1
4'-8"	590.5	7'-8"	1,371.1	10'-8"	2,214.1
4'-9"	611.3	7'-9"	1,393.7	10'-9"	2,238.1
4'-10"	632.2	7'-10"	1,416.4	10'-10"	2,262.1
4'-11"	653.1	7'-11"	1,439.1	10'-11"	2,286.1
5'-0"	674.1	8'-0"	1,461.8	11'-0"	2,310.1
5'-1"	695.1	8'-1"	1,484.6		
5'-2"	716.2	8'-2"	1,507.4		

Weight given in short tons for operation in sea water.

ELLIOTT BAY DESIGN GROUP, LTD.

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